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PATENTED MAR. 8, 1904.

H. WITTEKIND & R. E. BOURKE.

SHEET METAL STUDDING.

APPLICATION FILED MAY 27, 1903.

NO MODEL.

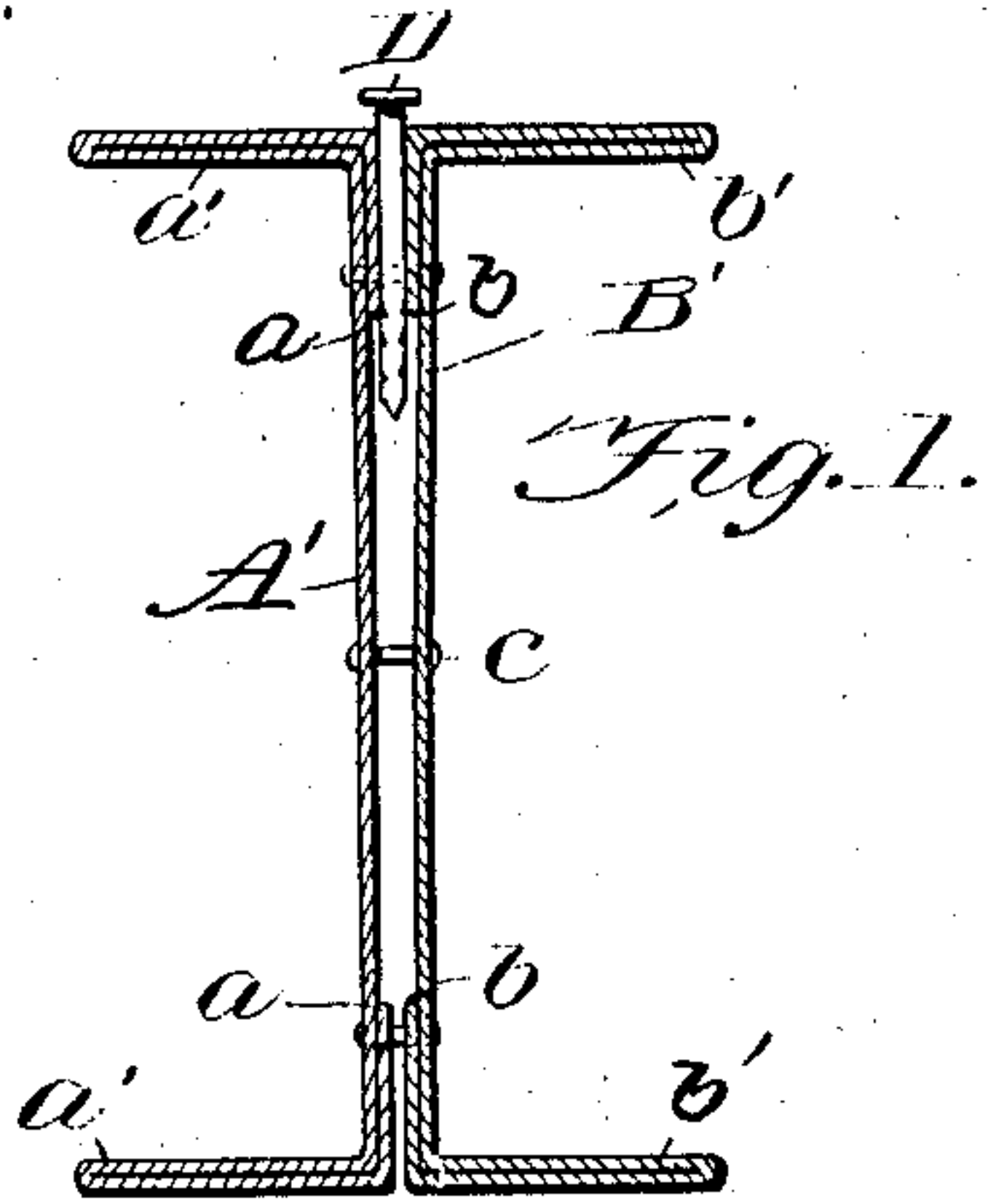


Fig. 2.

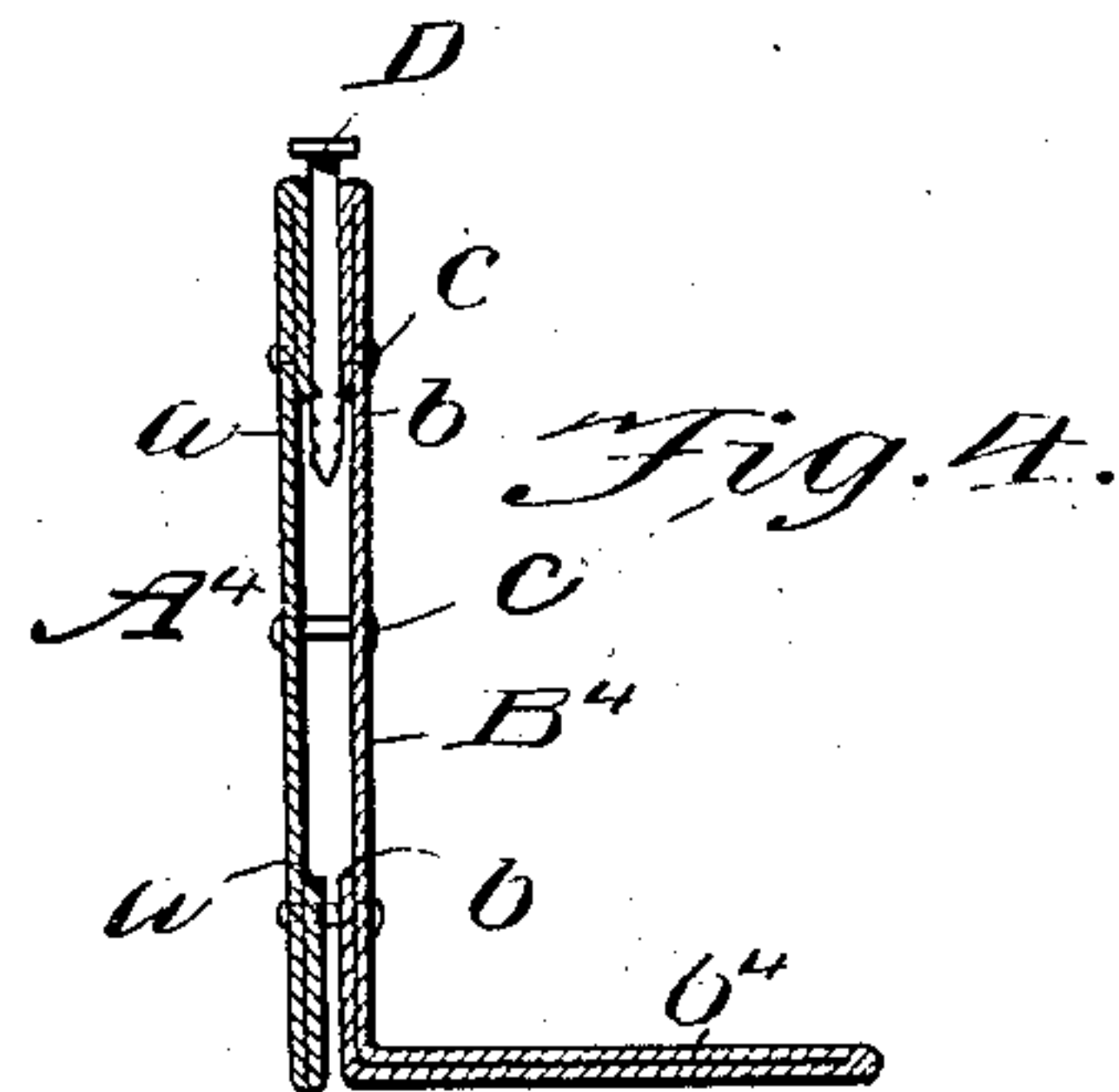
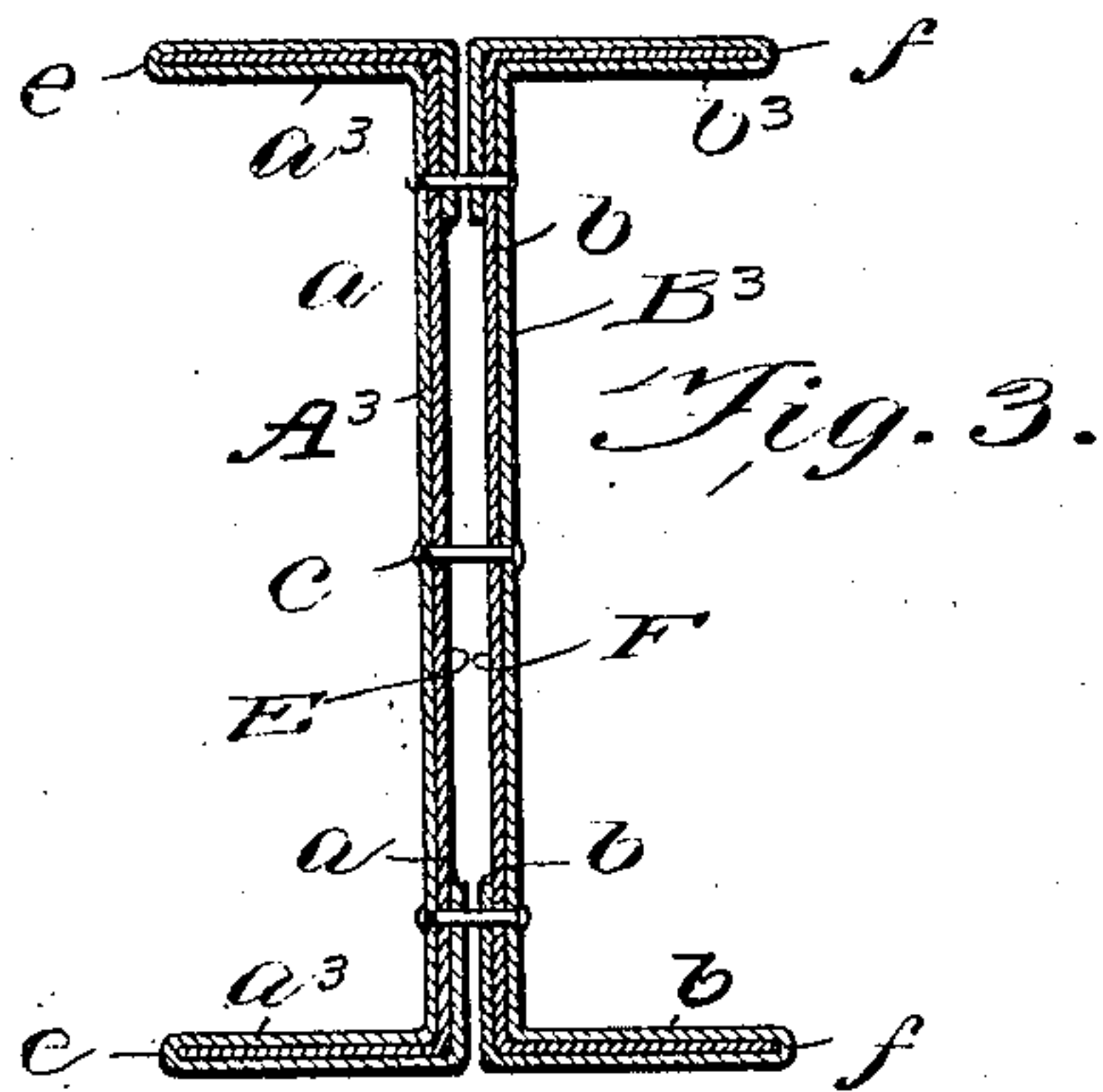
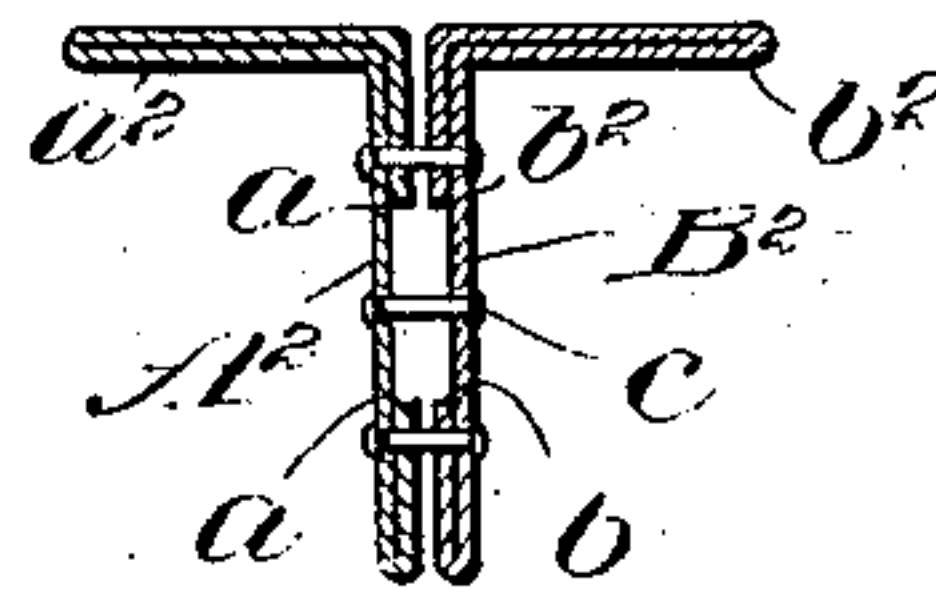
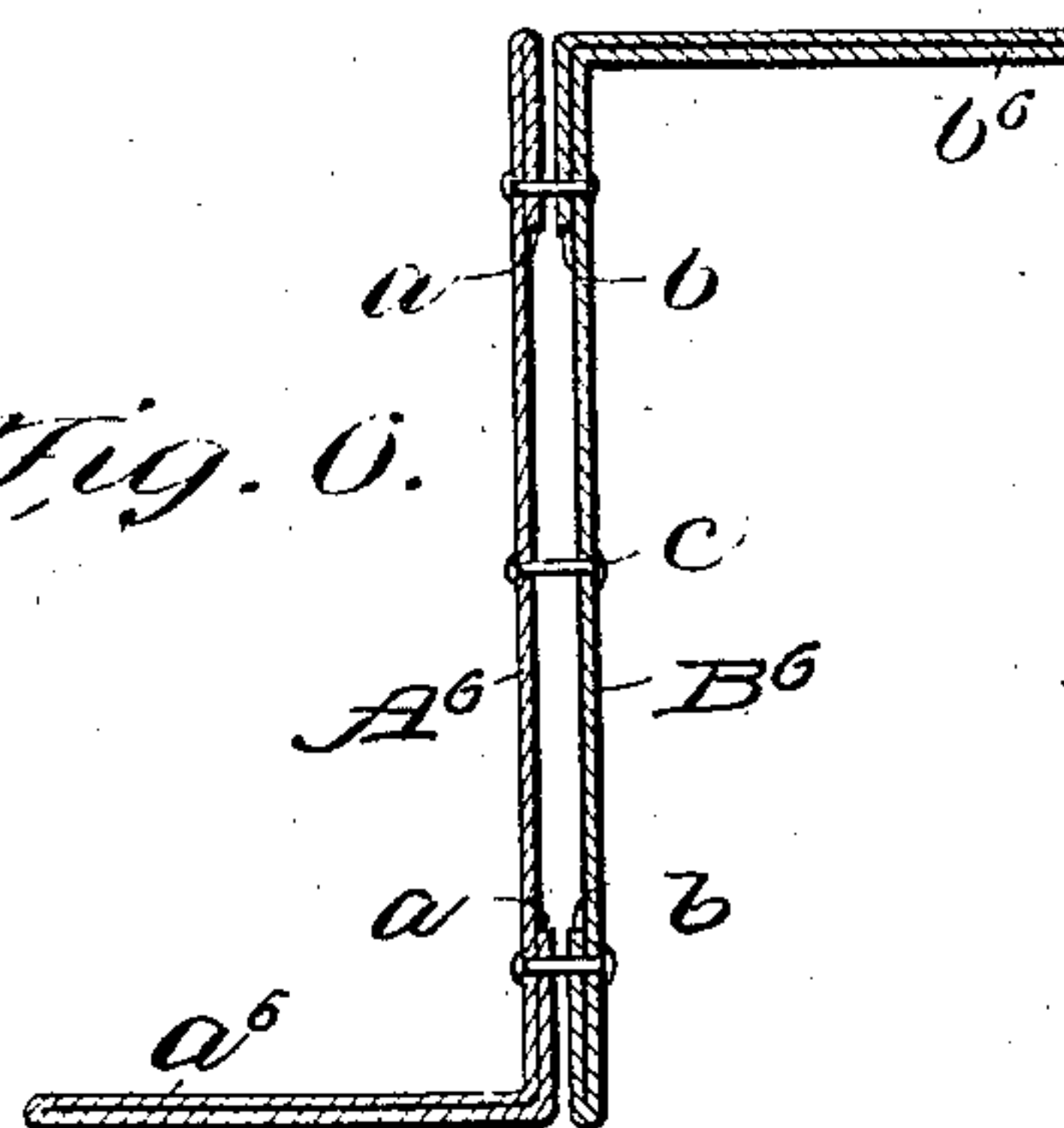
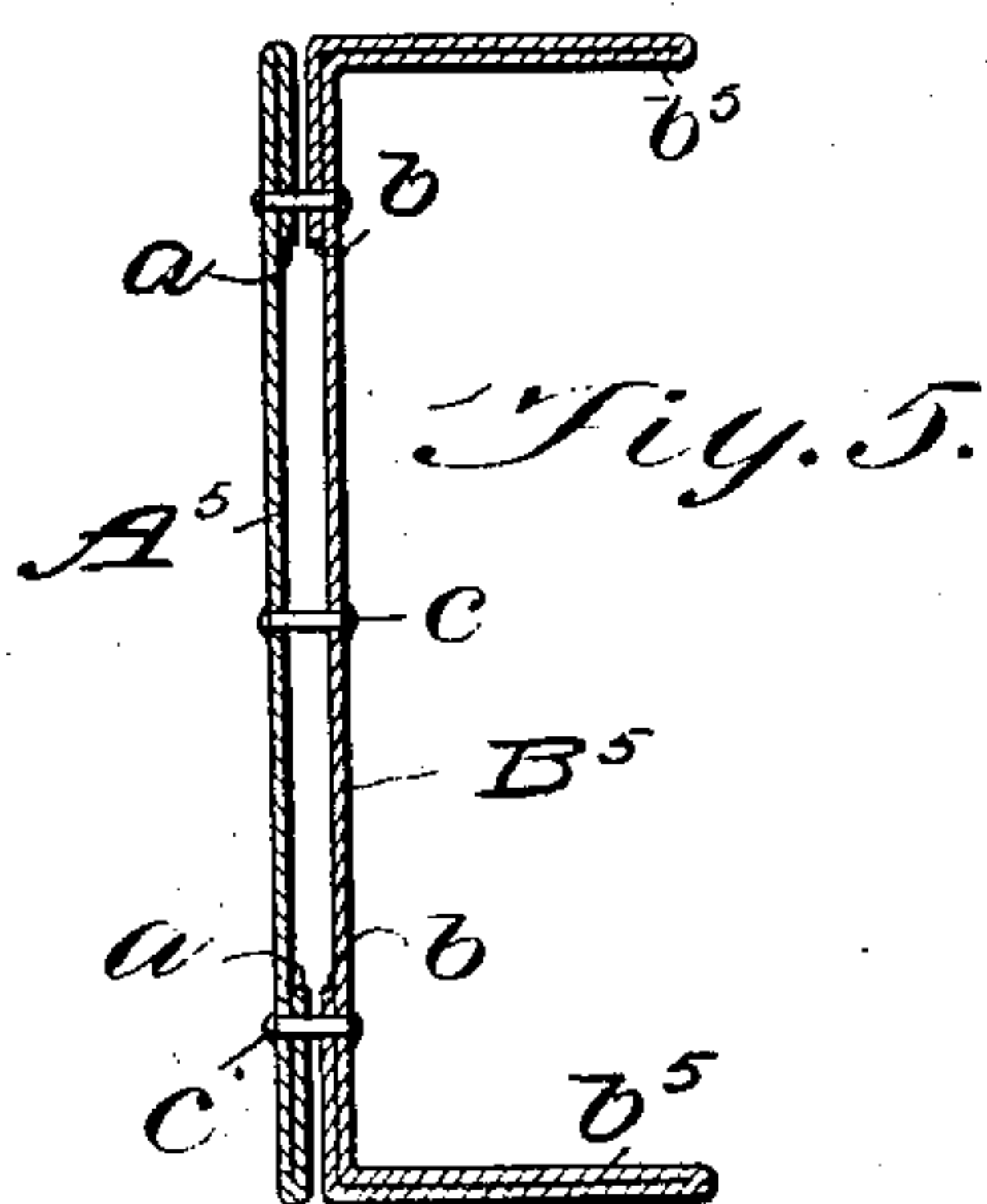


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## SHEET-METAL STUDDING.

SPECIFICATION forming part of Letters Patent No. 754,270, dated March 8, 1904.

Application filed May 27, 1903. Serial No. 158,920. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY WITTEKIND and ROBERT E. BOURKE, citizens of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Sheet-Metal Studding; and we declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates in general to members used in the erection of buildings—such as roof-joists, floor-joists, scantling, or studding—and more particularly to sheet-metal building members.

In order that buildings may be thoroughly fireproof, it is desirable to use in their construction metallic joists and studding and to secure to the studding metallic lathing upon which the plaster is supported. The employment of metal studding and lathing has rendered it necessary that provision be made for enabling the lathing to be readily and securely fastened to the studding.

The primary object of our invention is to provide a metallic building member to which the lathing or other structural members may be readily and securely fastened by the use of nails.

A further object of our invention is to provide a building member composed of sheet metal which will be light and simple in construction, inexpensive in manufacture, and strong and durable in use.

Our invention, generally described, consists in a building member formed of sheet metal the web of which comprises two or more thicknesses of metal between which at one edge an additional thickness of metal extends a short distance, thereby enabling nails to be driven between the two thicknesses of the web and retained therein through engagement of the edge of the inwardly-extending short thickness with the nails, the latter being preferably barbed to render such engagement positive and secure.

Our invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated

as embodied in several convenient and practical forms, and in which—

Figure 1 is a cross-section of a member comprising a web and oppositely-extending flanges at each end thereof; Fig. 2, a cross-section of a member in which oppositely-extending flanges are provided only at one end of the web; Fig. 3, a view similar to Fig. 1, in which the two parts composing a member are reinforced by channel-beams; Fig. 4, a cross-section of a member in which a single flange is provided extending in one direction from one end of the web; Fig. 5, a view similar to Fig. 4, in which a single flange extends from each end of the web and in the same direction; and Fig. 6, a view similar to Fig. 5, in which a single flange is provided at each end of the web, such flanges extending in opposite directions.

Similar reference characters are used to indicate similar parts in the several figures of the drawings.

Reference characters A' and B', referring particularly to Fig. 1, indicate two similar parts united by means of rivets *c* to form the building member. The part A' of the member comprises a web at the ends of which extend in the same direction flanges *a' a'*, formed of two thicknesses of metal, such thicknesses being bent around and lying adjacent to the web, as indicated at *a a*. The part B' is similar to the part A' and consists in a web at the opposite ends of which extend flanges *b' b'*, formed of two thicknesses of metal, which extend around the web a short distance, as shown at *b b*.

D indicates a nail driven between the two thicknesses of the web of the member shown in Fig. 1 for the purpose of securing lathing or other structural members. The nail is shown as barbed, thereby rendering its retention between the two thicknesses of the web secure and positive through the engagement of the barbs with the edges of the inwardly-extending thicknesses of metal *a* and *b*.

In Fig. 2, A<sup>2</sup> and B<sup>2</sup> indicate the two parts of the building member, which are secured together by any suitable fastening devices—such, for instance, as rivets *c*. In this modification flanges *a*<sup>2</sup> and *b*<sup>2</sup> extend in opposite directions from only one end of the two parts



of the web. The webs  $a^2$  and  $b^2$  are, as in Fig. 1, made of two thicknesses of metal which terminate between the two parts of the web to form short thicknesses of metal  $a$  and  $b$ , the edges of which retain the nails in position.

The modification shown in Fig. 3 is similar to that shown in Fig. 1 except that reinforcing channel-bars E and F are surrounded by the metal composing the two parts  $A^3$  and  $B^3$  of the member. These channel-bars need not necessarily be what are technically known as "channel-beams," but may be thin—such, for instance, as sheet metal bent to the channel form. The oppositely-extending flanges  $a^3$  and  $b^3$ , located at each end of the web, are composed of two thicknesses of metal which surround the flanges on the channel-beams and terminate in short thicknesses of metal between the two parts of the web to form nail-retaining edges.

Fig. 4 illustrates another modification of our invention, in which the member consists of two parts  $A^4$  and  $A^5$ , united by rivets  $c$  to form a web between which nails may be driven. Only one of the parts—namely,  $B^4$ —is provided with a flange  $b^4$ . Inwardly-extending thicknesses of metal are, however, provided between the two parts of the web to form nail-retaining edges.

In Fig. 5 we have illustrated a modification similar to Fig. 4 except that parallel flanges  $b^5$  extend in the same direction from the opposite ends of the member  $B^5$ . The member  $A^5$  is, however, provided with inturned thicknesses of metal which cooperate with inturned thicknesses of metal to form nail-retaining edges.

The embodiment of our invention shown in Fig. 6 consists in two parts  $A^6$  and  $B^6$ , united by rivets  $c$  to form a web composed of two thicknesses, at each end of which is located a flange, such flanges  $a^6$  and  $b^6$  extending in opposite directions. As in the other embodiments of our invention, short inturned thicknesses of metal extend between the two thicknesses of the web to form nail-retaining edges.

The manner of using our invention will be readily understood by those skilled in the art from the foregoing description. The member is secured in the desired position in the building and in the desired relation with the other cooperating members. The lathing or other structural members may then be readily secured to our improved building member by merely driving nails through the lathing and between the two thicknesses of the web, the nails being of such a length that the ends thereof project inwardly beyond the retaining edges of the inturned short thicknesses of metal, and are thereby securely locked between the parts of the web. The two thicknesses of the web may be closely united by means of the rivets without preventing the driving of nails between the same, inasmuch as the distances between the rivets are such

that the resiliency of the metal permits the separation of the two thicknesses sufficiently to enable the nails to be driven between the same.

It is evident from the foregoing description that we have invented an improved sheet-metal building member which is light and at the same time strong structurally and which contains provision for the ready attachment thereto by the use of nails, staples, or other fastening devices lathing or other cooperating structural members.

While we have illustrated a number of embodiments of our invention, we do not wish to be understood as limiting ourselves thereto, as the invention is capable of a variety of embodiments. We consider any sheet-metal building member as coming within the scope of our invention which consists in a web formed of two thicknesses of metal between which at one end extends an additional short thickness of metal, thereby forming a retaining edge to engage a nail or other fastening device driven between the two thicknesses of the web.

Having now fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A sheet-metal building member comprising a web formed of two parts rigidly united together between which fastening devices for securing thereto cooperating building members are adapted to be driven, the opposite edges of one of said parts terminating in portions extending inwardly between the two parts composing the web, the edges of such portions adapted to engage and retain the fastening devices between the two parts of the web.

2. A sheet-metal building member comprising a web formed of two parts rigidly united together between which fastening devices for securing thereto cooperating building members are adapted to be inserted, the opposite ends of each part terminating in portions extending inwardly between the two parts composing the web, thereby forming locking edges at each end of the web to retain therein the inserted fastening devices.

3. A sheet-metal building member comprising a web formed of two parts rigidly riveted together, a flange formed at each end of each part of said web each of said flanges composed of a plurality of thicknesses of metal and each terminating in a portion extending inwardly between the two parts of the web thereby forming locking edges at each end of the web to retain fastening devices therein.

In testimony whereof we sign this specification in the presence of two witnesses.

HENRY WITTEKIND.  
ROBERT E. BOURKE.

Witnesses:

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